

ELECTRONICS TECHNICIAN

Name AGUSTIN LUCAS  
Date JUNE-3-57




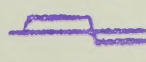
EXAMINATION

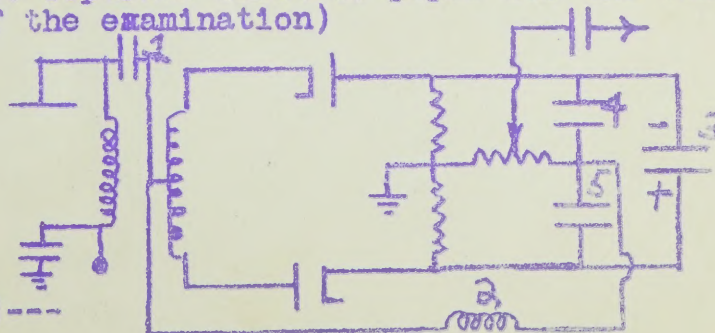
FM---Limiters---DC Clamping

graded By John Tuzen

1. What changes in a FM signal corresponds to a change in:  
A. amplitude? AMOUNT OF FR. DEVIATION  
B. frequency? RATE OF DEVIATION
  2. High frequency compensation in FM transmission and reception is required because? THE HIGH FR. PICK UP MORE NOISE, THEREFORE THEY ARE EMPHASIZED IN THE TRANSMITTER AND DE-EMPHASIZED IN THE RECEIVER, TO BE ABLE TO CLIP THE NOISE WITHOUT AFFECTING THE FR. RESPONSE.
  3. Slope detection of a FM signal can be accomplished by: DETUNING SLIGHTLY THE INPUT TANK CRT TO THE DETECTOR, SO IT OPERATES ON THE SLOPE OF THE FR. CURVE. (DIODE DETECTOR)
  4. A limiter stage operates with LOW plate VOLTAGE and its purpose is to: LIMIT THE NEGATIVE PEAKS OF THE OUTPUT VOLTAGE BY PLATE-CURRENT SATURATION.
  5. The main advantage of the Foster-Seely discriminator is: HAS ONLY ONE SECONDARY TO TUNED AND TO ONLY ONE FREQUENCY. THE I.F.
  6. The reference voltage in a Foster-Seely discriminator is THE PRIMARY VOLTAGE.
  7. The schematic illustrates a RATIO DETECTOR.
- Give the function of the following parts:
8. ---1. --- COUPLING CAP. TO COUPLE THE R.F. TO THE CENTER TAP. SEC.
  9. ---2. --- R.F.C. TO KEEP THE CENTER TAPPED SEC. ABOVE R.F. GROUND.
  10. ---3. --- TO ELIMINATE THE AMPLITUDE VARIATIONS OF THE FM WAVE, BY KEEPING THE REFERENCE VOLTAGE CONSTANT.
  11. ---4 and 5. R.F. BY-PASS CAPACITORS.
  12. Describe the effect on frequency with a change in plate current for a reactance tube modulator and a phase modulator. IF THE REACTANCE TUBE ACTS CAPACITIVE, AN INCREASE IN PLATE CURRENT WILL INCREASE THE Gm. OF THE TUBE, WHICH IN EFFECT WILL INCREASE THE EFFECTIVE CAPACITANCE LOWERING THE FR. OF THE OSCILLATOR. IN A PHASE MODULATOR AN INCREASE IN PLATE CURRENT WILL ADVANCE THE PHASE ANGLE OF THE R.F. WAVE THEREFORE LOWERING THE FR.
- Draw schematics of the following: ( use separate sheet of paper for the balance of the examination)

13. Positive series diode limiter.
14. Negative shunt diode limiter.
15. A grid limiter.

16.  + schematic = 
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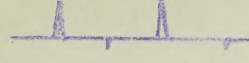
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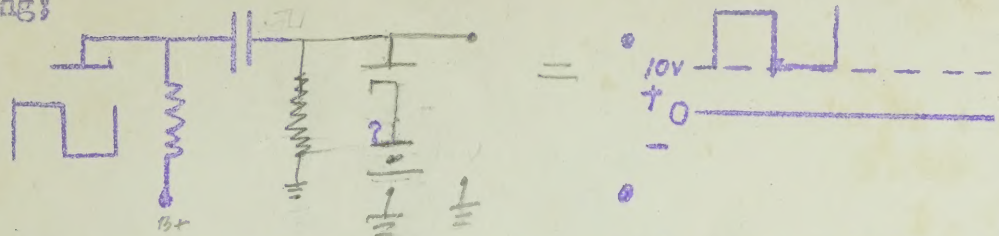
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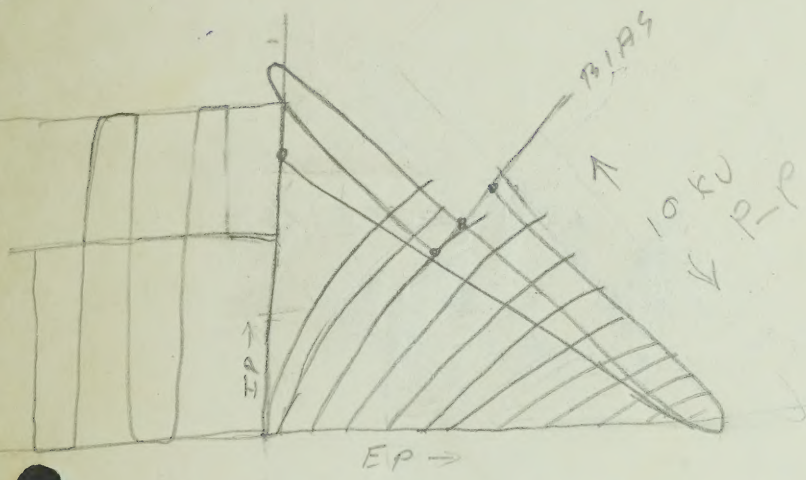
Lucas

18.  + schematic = 

19. DC Clamping;



20. Draw the characteristic curve for an overdriven amplifier:



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